

INSTRUCTIONS  
FOR THE OPERATION

AND  
CARE OF YOUR

1937

CHEVROLET



PASSENGER CARS

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INSTRUCTIONS  
For the Care of  
CHEVROLET

1937 MASTER DE LUXE  
1937 MASTER  
PASSENGER CARS



SECOND EDITION

Chevrolet Motor Company  
DETROIT - - MICHIGAN

# A MESSAGE TO ALL CHEVROLET OWNERS

We welcome you as a Chevrolet Owner and we shall always be interested in the service, comfort, pleasure and the thousands of economical miles of travel you get out of your car.

Your new Chevrolet, like any piece of machinery, requires a certain amount of care at specified intervals and if your car is given this care, a maximum return of your investment in transportation may be expected, at the minimum cost per mile.

Your Dealer has thoroughly inspected your car and has made any adjustments necessary to fit local conditions, according to the items listed on the Dealer New Car Delivery Report.

This inspection has been carefully supervised by your Dealers' Service Manager and oke'd by him. When you took delivery of your new car, you were invited to carefully inspect your new car and then asked to sign the report as a delivery receipt.

This is your assurance that your new Chevrolet has been delivered to you in proper condition and is ready for its initial "Breaking-in Period."

In the following pages we have included such information considered essential to the efficient and pleasurable operation of your car. No attempt has been made to go into the mechanical construction, operation of the units, or the necessary mechanical operations to make adjustments and repairs.

For these mechanical adjustments and repairs, we suggest that you take your car to an Authorized Chevrolet Service Station, where it will receive the attention of factory-trained mechanics using factory-approved tools and equipment, and Genuine Chevrolet parts guaranteed by the Chevrolet Motor Company.

Get the habit of having factory-trained mechanics inspect and lubricate your car at each 1000-mile period. Keep all moving parts of your car clean and well lubricated and enjoy thousands of economical miles of motoring.

CHEVROLET MOTOR COMPANY

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by

CHEVROLET MOTOR COMPANY

DETROIT, MICHIGAN



Fig. 1—New Car Delivery Report

Your car has been thoroughly inspected and necessary adjustments made, according to the items listed on the above Dealer New Car Delivery Report.

The Owner Service Policy which you received from your Dealer identifies you as a purchaser of a new Chevrolet and is your protection against defective materials and workmanship, under the terms of the Standard Warranty.

Attached to your Owners Service Policy is a coupon, which entitles you to a free inspection and adjustments at the 500-mile period. These adjustments assure you of having your car in perfect adjustment during the "Breaking-in" period.



# DATA

## Car Serial Number:

Stamped on plate on right front side of body under hood.

## Engine Number: 51194

Stamped on boss on right side of cylinder block just back of the fuel pump.

Wheelbase.....112 $\frac{1}{4}$ "

Tire Sizes.....6.00 x 16"

Tire Pressures.....26 lbs. Front  
28 lbs. Rear

## Engine:

Number of cylinders.....6

Bore.....3 $\frac{1}{2}$ "

Stroke.....3 $\frac{3}{4}$ "

Horsepower (N. A. C. C.).....29.4

Piston Displacement.....216.4 cu. in.

## Engine Adjustments:

Spark Plug Type.....K-11

Spark Plug Gap......040"

Breaker Point Gap......018"

Ignition Setting: With octane selector set at zero, distributor points should break when steel ball on flywheel is opposite pointer on flywheel housing.

Note: Octane selector should be set for grade of fuel being used to produce a slight "ping" at acceleration. (See Page 8.)

Carburetor Idle Adjustment.....1 to 2 turns open

Intake Valve Clearance......006" minimum hot

Exhaust Valve Clearance......013" minimum—hot

Air Cleaner: Remove at least every 2000 miles and thoroughly wash out filter element in gasoline and dip in fresh engine oil. This should be done more frequently when operation is over dusty roads.

## Unit Capacities:

Oil Capacity—Crankcase.....5 qts.

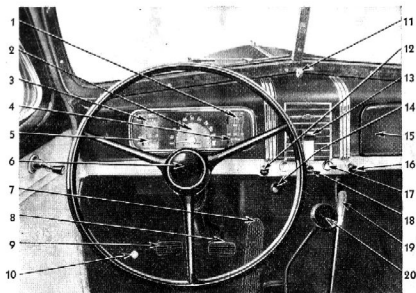
Grease Capacity—Transmission.....1 $\frac{1}{2}$  pts.

Grease Capacity—Rear Axle.....3 pts.

Water Capacity—Cooling System (2 drain cocks)...14 qts.

Gasoline Tank Capacity.....14 gals.

Note: Above figures are for refill. Dry units may require slightly more.



*Fig. 2—Controls and Instruments (Master De Luce Models)*

- |                                 |                             |
|---------------------------------|-----------------------------|
| 1—Ammeter                       | 11—Windshield Wiper Control |
| 2—Speedometer                   | 12—Light Switch             |
| 3—Gasoline Gauge                | 13—Ash Receiver             |
| 4—Water Temperature Indicator   | 14—Cowl Ventilator Control  |
| 5—Oil Pressure Gauge            | 15—Glove Compartment        |
| 6—Horn Button                   | 16—Choke Control            |
| 7—Starter and Accelerator Pedal | 17—Ignition Switch          |
| 8—Brake Pedal                   | 18—Throttle Control         |
| 9—Clutch Pedal                  | 19—Parking Brake Lever      |
| 10—Headlamp Dimmer Switch       | 20—Gear Shift Lever         |

## CHAPTER I

# CONTROLS AND INSTRUMENTS

The first thing the driver of a new car must do is to familiarize himself with the various controls provided for its proper handling. This does not apply to the beginner alone, as although there are many points of similarity between all cars, there are also important differences; and it is not wise regardless of previous experience, to drive a new car before fully understanding what each control is for and how to use it.

### DOOR AND GLOVE COMPARTMENT LOCKS

The ignition and door lock keys are the same. The lock number stamped on the knock-out plug in the center of the key should be recorded to protect you in case your keys are lost. The lock number is not stamped on the lock.

If the lock number is lost, and a new key is needed, it may be ordered through the Theft Bureau of the Chevrolet Motor Company, Detroit, Michigan, advising them the car serial and engine numbers.

To lock the car from the inside, lower the locking knob located on the bottom of the window opening.

To lock the car from the outside, either of two ways may be used.

First—with the door open, lower the inside locking knob and hold the outside handle down (vertical) while closing the door.

Second—with the door closed, insert door key in the locking handle of the right front door and give the key a quarter turn to the right.

To unlock the car from the outside, insert door key and give key a quarter turn to the left.

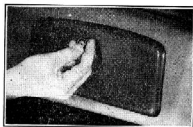


Fig. 3 . Glove Compartment Door

To unlock and open the glove compartment door, insert the key and turn it to the right. Grasp the knob between the first and second fingers, Fig. 3, and press in on the knob center. This disengages the latch from the latch striker plate allowing the door to open.

After a record has been made of the key number, the clover leaf knock out in the center of the key should be pushed out and destroyed.

## IGNITION LOCK

The keys supplied for the door lock are also used for unlocking and locking the ignition switch.

## THROTTLE CONTROL

The speed of the engine is controlled by opening and closing a throttle valve in the carburetor. This throttle is controlled from the driving compartment, both by a foot pedal and a throttle button. The foot pedal, or accelerator, is used to increase or decrease the speed of the car, as required in driving. The throttle button on the instrument panel is used for idling or when starting the engine, and may be set in any desired position. Its normal driving position is close up to the instrument panel.

## SPARK CONTROL

The spark timing of the Chevrolet engine is controlled by three engineering features, namely:

1—MANUALLY—by the *Octane Selector*.

For maximum economy and performance the octane selector must be advanced as far as possible without the engine knocking at wide open throttle. When the lower octane fuels are used the selector should be retarded. Higher octane fuels permit more advance, resulting in a still greater economy and performance.

2—AUTOMATIC—By the *speed of the engine, through the governor weights in the distributor.*

3—AUTOMATIC—By the *throttle opening effect upon the vacuum spark control.*

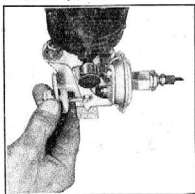


Fig. 4—Octane Selector

## CHOKE CONTROL

When starting a cold engine, it is necessary to provide a fuel mixture richer in gasoline than is ordinarily required. The choke control button operates a device on the carburetor for enriching the fuel mixture being supplied to the engine.

The correct use of the choke is extremely important; if improperly handled it may seriously affect the life of the engine by the thinning effect on the lubricating oil of unburned gasoline leaking by the pistons.

The choke should not be used if the engine retains any heat from previous running, without first attempting to start the engine with its normal fuel mixture.

If the choke has been used excessively, open the throttle to admit sufficient air to overcome the overloaded condition of the engine.

## OIL PRESSURE GAUGE

This gauge on the instrument panel is an indicator only and merely shows whether or not the pump is working. The amount of pressure shown on the oil pressure gauge does not necessarily indicate the condition, or amount of oil in the crankcase.

If the gauge does not register pressure, when the motor is running, stop the motor immediately and determine the cause.

## AMMETER

This instrument registers the flow of all current to or from the battery, except that taken by the starting motor. The ammeter reading is an indication of whether the battery is receiving its proper charging current from the generator, but does not indicate the condition of the battery.

## LIGHTING CONTROL

The headlamps, parking lights, and tail lamp are controlled by a single switch which is operated by a button of the instrument group. *When this button is pulled out to a position between the off and parking position, the generator output is increased. When pulled half-way out the parking lights and tail lamp are lighted. When pulled all the way out the headlamps and tail lamp are lighted.*

In addition to this switch control, the direction of the headlamp beam may be varied by pressure on the foot switch at the left of the toe board. For city driving the lighting switch should

be pulled out all of the way and the foot switch should be in that position which throws the light nearest the car. To throw the light farther ahead for driving on the open road, depress the foot switch again.

## GASOLINE GAUGE

Your car is equipped with an electrically operated gasoline gauge which increases motoring convenience and safety, by placing accurate indication of the fuel supply directly before the driver at all times when the ignition switch is turned on. The dial of the gauge is illuminated by a concealed bulb to facilitate night reading.

## HORN BUTTON

The horn button is located at the center of the steering wheel.

## WATER TEMPERATURE INDICATOR (MASTER DE LUXE MODELS)

The water temperature indicator located on the instrument panel functions as a thermometer, indicating the temperature of the water in the cylinder head. A metal bulb containing a highly expansive gas is inserted in the cylinder head and is connected, by a small tube, to the indicating instrument which operates on the same principle as a pressure gauge, but indicating relative temperatures of the water by gradual movement of the pointer.

## STARTING AND ACCELERATOR PEDAL (MASTER DE LUXE MODELS)

Pressure of the starting and accelerator pedal engages the starter mechanism and starts the electric motor, which cranks the engine.

As soon as the engine starts, release the foot slightly, which will automatically disconnect the starting mechanism from the pedal, which is then used as an accelerator.

This starter mechanism is operated by a vacuum controlled diaphragm which connects it with the accelerator pedal when the engine is NOT operating. When the engine IS operating the manifold suction moves the diaphragm, disconnecting the starter control, permitting the accelerator pedal to operate only the throttle valve in the carburetor.

## STARTING BUTTON (MASTER MODELS)

Pressure on this button engages the starter mechanism and starts the electric motor, which cranks the engine. Since the starting motor runs off the battery and draws considerable current, it should not be operated for more than 10 seconds at a time. Release the starter button immediately the engine starts and do not press it down a second time until engine has come to a complete rest. Serious damage may be done to the starting motor and flywheel if this caution is not observed.

## CLUTCH PEDAL

By means of this control the power required in putting the car in motion, may be gradually and smoothly transmitted to the rear wheels.

When the clutch pedal is in its normal position, the clutch is engaged and the engine is directly connected to the transmission. By depressing the pedal, the clutch is released and the engine disconnected from the transmission gears, permitting the shifting of the transmission gears.

## GEAR SHIFT LEVER

By use of the gear shift lever, the transmission gears are correctly meshed to transmit power to the rear wheels in proper proportion to the work necessary under various driving conditions.

There are three gears or speeds forward and one reverse. Of the forward gears, first or low gear, provides the greatest amount of power with correspondingly low car speeds, and is therefore the correct gear for heavy pulls, as when getting the car in motion, pulling up a very steep grade, or on the level through heavy sand or mud. Third or high speed gear provides the high speed driving range. Second or intermediate gear, as its name implies, provides the intermediate driving range.

## BRAKE PEDAL

Depressing this pedal applies the four-wheel service brakes used for controlling the momentum of the car when stopping.

## HAND BRAKE LEVER

The hand brake lever is interconnected with the rear service brakes and is used for holding the car when parked or when getting under way on a steep grade.

## CHAPTER II

# CARE AND MAINTENANCE

### ENGINE

The engine used in this Chevrolet model is a six-cylinder, four-cycle, valve-in-head type, having a combination of force feed, splash and "Pressure Stream" oiling system.

It is designed and built to deliver the maximum amount of power at the minimum cost per mile. This engine is a further refinement of the sturdy six-cylinder engine that has given more than 5,000,000 Chevrolet owners perfect satisfaction for many millions of miles.

This engine incorporates many features, such as a rigid crankcase, full length water jackets, four bearing sturdy crankshaft, "Pressure Stream" oiling system, water nozzles to control the temperatures around the valve seats, overhead valves, dome head pistons of the slipper skirt type, steel-backed babbitt lined camshaft bearings, manifold heat control, and many other refinements too numerous to mention here, but which are covered further on in this manual.

Very little care is required of an engine, except to see that the oil level is maintained in the crankcase and replaced at regular intervals, which of course depends upon the conditions under which the car is operated. In addition, a periodical inspection and tuning by competent mechanics will prolong the life and efficiency of the engine. Once every 2000 miles, it is good practice to remove the top of the air cleaner and clean the filter element in the top of the cleaner. This practice should be followed more often if the car is operated under severe dust conditions.

### OILING SYSTEM

The Chevrolet "Pressure Stream" oiling system keeps the engine practically immersed in oil at all times and at every speed. The gear type oil pump is placed inside the crankcase and sucks oil, through a screen, from the bottom of the oil pan and delivers it under pressure to the main and camshaft bearings and the oil distributor inside the left side of the engine, where it passes through the oil distributor valve.

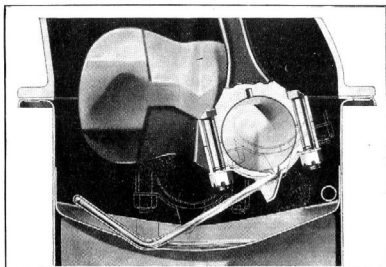
From the oil manifold a connection leads to the pressure gauge on the instrument panel to indicate oil pressure at this point and that the oil pump is working.



From the low pressure side of the oil distributor, a pipe carries oil to the hollow rocker arm shafts, providing positive lubrication for the rocker arms, push rods and valve stems. The excess oil from the rocker arm shafts is returned to the crankcase through an oil return tube.

Lubrication to the connecting rod bearings is assured at all speeds by the very efficient "Pressure Stream" oiling system.

Oil is delivered from the oil distributor through oil pipes to the oil nozzle located in the bottom of the connecting rod dip troughs. At high speeds, a positive stream of oil is forced under pressure along the path of each connecting rod bearing and forced into the dipper. See Figure 6.



*Fig. 6—Connecting Rod Lubrication*

The velocity of the rotating connecting rod, as it strikes the oil stream, increases the pressure at which the oil flows to over 10 times that of the initial pressure. The oil under this tremendous pressure is forced through the intake hole at the bottom of the connecting rod bearing in sufficient volume to retain an oil film in the bearing at all times.

At low speeds and when idling, sufficient oil for positive lubrication is fed into the oil troughs from which the connecting rod dippers dip oil as they revolve. These troughs hold sufficient

oil to give immediate bearing lubrication as soon as the engine is started, and act as reservoirs from which the connecting rod dippers dip oil as they pass through the trough.

Spray caused by the connecting rod dippers passing through the oil stream is thrown up against the cylinders providing lubrication for the pistons, piston pins and piston rings.

## CLUTCH

The clutch used by Chevrolet, Figure 7, is of the single plate dry disc type, consisting of a pressure plate assembly having nine pressure springs, three release levers and a clutch disc mounted on a drop forged splined hub. The clutch disc is of the torque spring type with facings riveted to each side.

### *THE CLUTCH MUST BE OPERATED DRY.*

The clutch fork is mounted on a swivel. The swivel is screwed in a shoulder stud in the clutch housing. By means of this mounting, alignment of the clutch release bearing is maintained because the bearing is free to find its own point of alignment without binding.

The release bearing is made of a carbon graphite composition shrunk into a trunnion collar mounted in the fork. This collar has an oil reservoir, which is back of the bearing, with an oiler on the top. This allows the throwout bearing collar to be filled with oil, which in turn seeps into the bearing.

*It is only necessary to refill the clutch throwout collar when, upon releasing the clutch, a "squeaking" noise occurs.*

To fill the clutch throwout bearing collar with oil, remove the floor panel and the inspection cover on the clutch housing. Driving conditions control the frequency of oiling this reservoir. It should be filled with S.A.E. 160 oil in the summer and S.A.E. 90 oil in the winter.

To assure maximum clutch efficiency and long life of the clutch parts, there should be not less than 1" of free pedal travel before the clutch starts to disengage.

## SYNCHRO-MESH TRANSMISSION

The Synchro-Mesh transmission, Figure 8, was designed and built to embody all the necessary fundamentals for successful

Fig. 7—Church

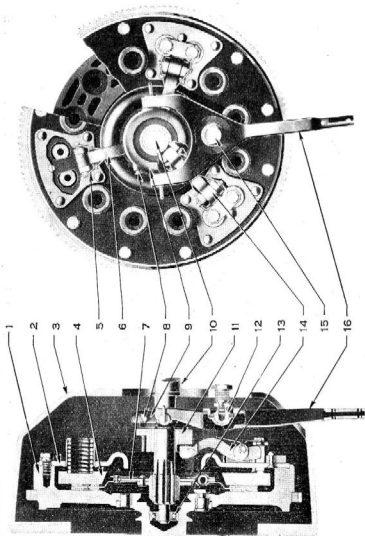


FIG. 7

- |                         |                              |
|-------------------------|------------------------------|
| 1—Flywheel              | 9—Release Bearing            |
| 2—Cover                 | 10—Clutch Gear Shaft         |
| 3—Flywheel Housing      | 11—Release Sleeve            |
| 4—Pressure Plate        | 12—Fork Ball Joint           |
| 5—Lever Springs         | 13—Clutch Gear Pilot Bearing |
| 6—Release Lever         | 14—Release Levers            |
| 7—Disc                  | 15—Ball Joint Screw          |
| 8—Release Bearing Oiler | 16—Clutch Fork               |

Synco-Mesh operation as developed and manufactured by Chevrolet and General Motors for the past number of years.

The Synco-Mesh transmission provides easy, quiet and quick gear shifting from first to second, second to high and high to second speeds without clashing, by merely pushing out the clutch and pulling or pushing the gear shift lever. No expert training is required for easy and quiet gear shifting; the novice can shift gears as easily as the expert.

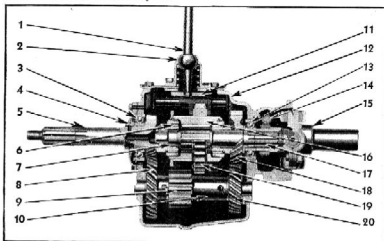


Fig. 8 Synco-Mesh Transmission

FIG. 8

- |                                |                                    |
|--------------------------------|------------------------------------|
| 1—Gear Shift Lever             | 11—Shifter Interlock               |
| 2—Gear Shift Lever Housing     | 12—Transmission Case               |
| 3—Clutch Gear Bearing          | 13—Rear Bearing                    |
| 4—Clutch Gear Bearing Retainer | 14—Speedometer Gears               |
| 5—Clutch Gear                  | 15—Universal Joint                 |
| 6—Main Drive Gear              | 16—Sliding Clutch                  |
| 7—Main Shaft                   | 17—Main Shaft                      |
| 8—Counter Driven Gear          | 18—Second Speed Gear               |
| 9—Counter Low Speed Drive Gear | 19—First and Reverse Sliding Gear  |
| 10—Counter Gear Assembly       | 20—Counter Second Speed Drive Gear |

The Syncro-Mesh transmission eliminates the pause between disengaging and engaging gears. This pause is to permit the faster turning gear to slow down so that its speed corresponds to the slower turning gear it is to engage. This is due to the difference of the speed ratios in the transmission. The synchronizing mechanism in the Chevrolet transmission automatically does this very thing, speeding up or slowing down the mating gear requiring no thought on the part of the driver.

## UNIVERSAL JOINT

The universal joint, illustrated in Figure 9 has been used successfully by Chevrolet for the past number of years. It is directly connected to and receives its lubrication from the transmission. Additional lubrication facilities at this point are unnecessary. The speedometer is driven from a worm and drive gear mounted on the universal joint.

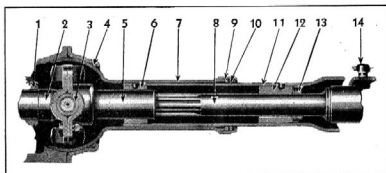


Fig. 9—Universal Joint

- |                                 |                                      |
|---------------------------------|--------------------------------------|
| 1—Speedometer Gears             | 9—Packing Gland Nut                  |
| 2—Front Universal Joint Yoke    | 10—Packing                           |
| 3—Trunion Bearing               | 11—Propeller Shaft Housing           |
| 4—Joint Ball Seal               | 12—Rear Propeller Shaft Bushing      |
| 5—Rear Universal Joint Yoke     | 13—Rear Propeller Shaft Bushing Seal |
| 6—Front Propeller Shaft Bushing | 14—Propeller Shaft Breather          |
| 7—Joint Ball                    |                                      |
| 8—Propeller Shaft               |                                      |

## INDEPENDENT FRONT WHEEL SUSPENSION— KNEE ACTION

(DELUXE MASTER MODELS)

Knee-action, independent front wheel suspension, permits individual action of the front wheels.

This suspension in combination with the rigid frame construction permits each wheel to follow the irregularities of the road, whether they be chuck holes or raised obstructions, without imparting a like movement to the frame, body and passengers.

The design of the front wheel suspension, Figure 10, gives maximum protection to all working parts, including springs, bearings, shock absorbers, etc., as they are enclosed in a dirt-proof housing and work in oil.

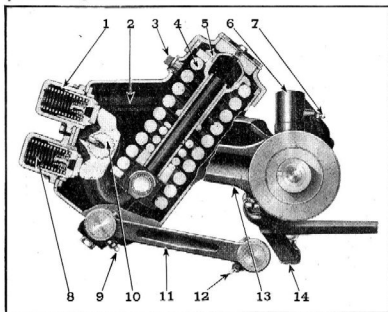


Fig. 10—Knee Action—Master De Luxe Models

- |                        |                           |
|------------------------|---------------------------|
| 1—Upper Shock Absorber | 8—Lower Shock Absorber    |
| 2—Housing              | 9—Pressure Gun Fitting    |
| 3—Filler Plug          | 10—Support Arm Shaft      |
| 4—Main Spring          | 11—Radius Rod             |
| 5—Main Spring Seat     | 12—Pressure Gun Fitting   |
| 6—King Pin Support     | 13—Wheel Support Arm      |
| 7—Pressure Gun Fitting | 14—Steering and Third Arm |

This unit consists of seven major parts as follows:

1—Housing. The coil springs and shock absorbers are protected within a waterproof steel case. Their original soft, quiet action is not impaired by exposure to dirt, mud and water. Genuine "GM" shock insulation fluid fills the entire housing, supplying the shock absorbers and lubricating all of the working parts. All joints on the outside of the spring housing are sealed against leakage.

2—Double Action Shock Absorbers. The upper shock absorber cushions the upward wheel travel and the lower shock absorber cushions the downward travel. Their operation is similar to the conventional double action shock absorbers.

3—Main Coil Spring. This heavy coil spring provides a smooth, cushioned riding action much softer and far more accurately controlled than conventional type leaf springs.

4—Secondary Coil Spring. A smaller, stiffer coil spring within the main coil spring automatically provides additional cushioning when required on exceptionally rough roads.

5—Spring Adjustment. Threaded plugs in the top of the housing permit close adjustments. When this proper adjustment is obtained, a special plate locks the plug in place.

6—Wheel Support Arm. The front end of this heavy drop-forged alloy steel arm operates the coil springs and shock absorbers. The rear end supports the front wheel spindle and front wheel.

7—Radius Rod or Bracing Arm. The radius rod or bracing arm is parallel to the wheel support arm and swings on large threaded bearings, one on the brake flange plate and one on the spring housing, bracing the wheel and permitting the wheel to travel only straight up and down and maintaining the brake flange plate and brake assembly in its correct position.

## OPERATION

As the wheel moves upward, the front end of the wheel support arm contacts the main spring which takes the wheel load and cushions the movement of the wheel. This main spring functions for  $1\frac{7}{8}$ " of the upward movement of the wheel and arm, after which the small inner "bottoming" spring is compressed,

building up the spring pressure and cushioning and stopping the shock from being transmitted to the car and occupants. At the same time the front end of the wheel support arm contacts the upper shock absorber, which also cushions the movement of the wheel.

The lower shock absorber cushions the wheel and the support arm on its downward movement. The main coil spring pressure forces the wheel downward and forces it to follow the road.

### CARE

At least every 1000 miles the level of the shock insulation fluid in the spring housing should be checked and the proper amount of Genuine "GM" Shock Insulation Fluid added to bring the level up to and even with the filler plug on the front of the housing. Genuine "GM" shock insulation fluid is recommended for this purpose as it will retain its fluid characteristics when the temperature is as low as 40 degrees below zero. This fluid is carried in stock at all Chevrolet Dealers.

Pressure gun fittings on the king pin and radius rod provide the means of lubricating these points. They should be lubricated with chassis lubricant every 1000 miles. At least every 2,000 miles the front spindle bushing should be lubricated. To do this, remove the plug at the inner end of the spindle and pack the reservoir with a lubricant such as vaseline or petrolatum. Passages from the reservoir carry the lubricant through the spindle to the bearing surface. Pressure should not be used at this point.

## FRONT AXLE

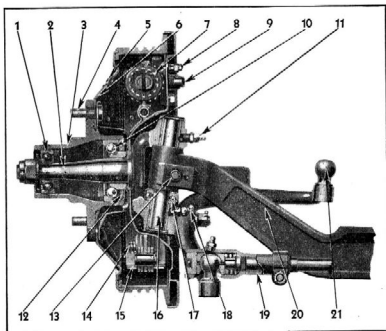
### (MASTER MODELS)

The front axle used on the Master models, Figure 11, is known as the reverse Elliot type. It is a steel drop forging with the spring seats forged integral with the "I" beam. The "I" beam is heat treated for extreme toughness and is machined to very close limits.

The king pin is slotted and held in position by a tapered pin which is drawn tightly into the slot by a lockwasher and nut.



The steering knuckle is mounted to the front axle by means of the king pin and rides on a ball bearing which makes steering easy.



*Fig. 11—Front Axle Assembly—Master Models*

- |                               |                           |
|-------------------------------|---------------------------|
| 1—Wheel Outer Bearing         | 12—Inner Bearing Seal     |
| 2—Wheel Spindle               | 13—King Pin Lock Pin      |
| 3—Wheel Hub                   | 14—Brake Shoe             |
| 4—Wheel Hub Bolt              | 15—Brake Lining           |
| 5—Brake Adjusting Hole Cover  | 16—King Pin               |
| 6—Brake Drum                  | 17—King Pin Bearing       |
| 7—Wheel Brake Cylinder        | 18—Pressure Gun Fitting   |
| 8—Brake Bleeding Hole         | 19—Tie Rod End            |
| 9—Hydraulic Brake Fluid Inlet | 20—I Beam                 |
| 10—Wheel Inner Bearing        | 21—Steering and Third Arm |
| 11—Pressure Gun Fitting       |                           |

## FRONT WHEEL ALIGNMENT

To make steering easy, it is required that the front wheels should "toe-in"; that is, the distance between the center of the tread at the rear of the front tires, measured at the height of the wheel hubs, should be from  $\frac{3}{16}$  inch to  $\frac{1}{8}$  inch more at the rear

than at the front. This causes the wheels to grip the road better and allows the car to hold its course without undue action on the steering mechanism, preventing undue tire wear.

By referring to Figure 12, the distance indicated by line B—i. e., between the center of the tire at the rear of the front wheels at wheel hub height—should be from  $\frac{1}{8}$  inch to  $\frac{1}{4}$  inch greater than the distance indicated by line A.

The best method of checking these measurements is by use of a front wheel trammig device. Almost any good repair shop or tire station is equipped with one of these devices and will check the alignment of the wheels for you.

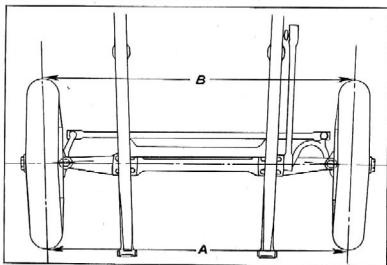


Fig. 12—Front Wheel Alignment

To decrease the distance at line "A"—loosen the adjusting clamp screws at both ends of the tie rod and turn the tie rod to the right. To increase this distance turn to the left.

*After proper adjustment has been secured, be absolutely certain to fasten both adjusting clamp screws firmly, as failure to do so may result in a serious accident to the car and occupants.*

## STEERING GEAR

The steering gear used in Master De Luxe models is of the ball bearing roller sector type with hour glass worm. The steering gear used in Master models is of the worm and sector type.

They are designed to give the greatest ease of handling with the least amount of wear and consequent adjustment. The roller bearings above and below the steering worm insure quietness and easy steering.

Means of adjustment to compensate for wear are provided. These adjustments, however, should not be attempted by anyone other than a competent mechanic. When adjustments are required consult your Chevrolet dealer.

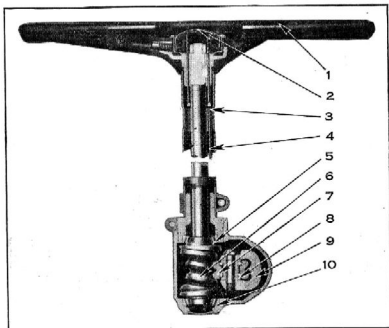


Fig. 13—Steering Gear Assembly—Master De Luxe Models

- |                        |                          |
|------------------------|--------------------------|
| 1—Steering Wheel       | 6—Steering Worm          |
| 2—Horn Button          | 7—Gear                   |
| 3—Must Jacket Bushing  | 8—Gear Bearing           |
| 4—Horn Wire            | 9—Pitman Arm Shaft       |
| 5—Upper Roller Bearing | 10—Bottom Roller Bearing |

Incorrect toe-in or wheel bearing adjustment of the front wheels, improper tire inflation or incorrectly adjusted brakes have a pronounced effect on the steering of the car. These points should be checked before adjustment of the steering gear is attempted.

## REAR AXLE

The rear axle used on Chevrolet passenger cars is known as the semi-floating type, with a one-piece banjo type pressed steel housing. The differential, ring gear and pinion are mounted with the carrier in a unit with the propeller shaft. See Figure 14.

The ring gear and pinion are "Hypoid" gears, which resemble in appearance the spiral bevel gears, used in previous Chevrolet passenger cars. These gears, through the construction

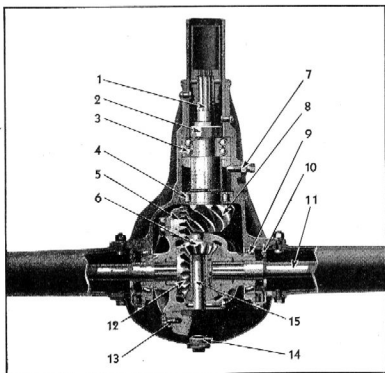


Fig. 14—Rear Axle Assembly

- |   |  |
|---|--|
| 1—Pinion Gear Shaft                         | 8—Pinion Gear                              |
| 2—Pinion Gear Rear Bearing Retaining Nut    | 9—Differential Side Bearing                |
| 3—Front Pinion Gear Bearing                 | 10—Differential Side Bearing Adjusting Nut |
| 4—Rear Pinion Gear Bearing                  | 11—Axle Shaft                              |
| 5—Ring Gear                                 | 12—Differential Side Gear                  |
| 6—Differential Pinion Gear                  | 13—Ring Gear Cap Screw                     |
| 7—Front Pinion Gear Bearing Retaining Screw | 14—Filler Plug                             |
|   | 15—Differential Pinion Gear Shaft          |

of the teeth, combine the advantages of both worm and bevel type gears and produce maximum tooth bearing surface and smooth quiet operation. Because of this "Hypoid" construction the ring gear is extremely sturdy and rugged.

Two Hyatt roller bearings support the axle shafts at their outer ends and one New Departure double row and one roller bearing support the pinion. The differential is supported by two "Barrel type" bearings.

The axle housing cover not only protects the differential, ring gear and pinion, but it also forms a part of the oil reservoir as well as acts as an inspection cover. By removing this cover, the differential and bearings are open for inspection.

## REAR AXLE LUBRICATION

Because of this "Hypoid" rear axle, a lubricant blended to provide proper lubrication for the "Hypoid" rear axles must be used. YOUR CHEVROLET DEALER HAS HYPOID LUBRICANT and you are urged to have him lubricate the rear axle of your car.

The axle of your car as you receive it is filled with a "Hypoid" lubricant suitable for year-round service. Seasonal changes are not required but it is recommended that you have your Chevrolet dealer drain the axle housing and re-fill with new "Hypoid" lubricant twice a year or every 6,000 miles.

## TIRES

The tires which come with your car are guaranteed according to the standard tire guarantee and road hazard form. They have been registered with the manufacture of the tire and you have received a copy of the above mentioned guarantee from your dealer. In case any question arises about the tires take the matter up with either your Chevrolet dealer or the representative of the tire manufacturer.

## REMOVING WHEELS

To remove the wheel, first jack it up, then pry off the hub cap with a screw driver. Remove the wheel nuts with the demountable wheel wrench and the wheel can be removed from the hub.

When replacing the wheel, turn all nuts up lightly first, continue to tighten them until the wheel is drawn up snugly and evenly against the wheel flange.

## DISMOUNTING TIRES

Changing tires is an unpleasant task and is ordinarily done at your service station. However, on those rare occasions when the tire must be changed by the driver, the following instructions will help to simplify the problem.



Fig. 15

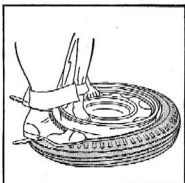


Fig. 16

*Dismounting the Tire*

After the wheel has been removed, deflate the tube entirely. Lay the wheel down and loosen the beads or edges of the tire on each side. Use a tire iron or other flat tool if necessary. With the wheel still flat, push the tire bead, on the side opposite the valve, into the well in the wheel rim. Hold this section of the tire in the well with the knees or feet.

Place a tire iron or other flat tool about four inches on each side of the valve between the tire and the rim. By forcing down on these tools, raise the tire bead over the edge of the rim flange. See Figure 15. Follow around the flange with one tool until the bead is completely free from the rim.

Then push the valve stem out of the wheel and remove the tube. Turn the wheel and tire over on its other side and, with the feet, force the top edge of the tire down inside the well in the wheel. Insert the two tire irons under the lower edge of the tire about 12 inches apart, keeping the opposite side down in the well, push on the two tire irons so that the wheel rim flange is raised up over the tire.

Hold the tire irons in that position with the feet, see Figure 16, and lift the wheel from the tire.

## MOUNTING THE TIRE

Clean out all dirt from the inside of the casing.

Application of a little vegetable oil soft soap to the inside and outside edges of the tire casing will make the assembly easier.

Inflate the tube until it is barely rounded out and insert it in the casing, placing the valve next to the red dot or balance mark on the casing. See that the valve is straight and centrally located between the edges of the tire.

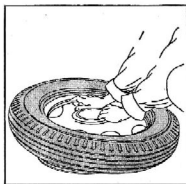


Fig. 17

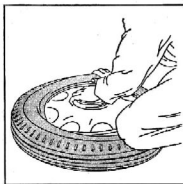


Fig. 18

*Mounting the Tire*

Lay the wheel on the ground with the valve hole toward you. Holding the tire with the valve toward you, lay it on the wheel and push a section of the lower edge of the tire next to the valve, down into the well of the tire. See Figure 17.

Push the valve stem through the valve hole in the wheel rim and screw on the rim nut a few turns. Check to see that the tube is not caught between the rim and the edge of the tire and then force the remainder of the lower edge of the tire over the rim flange.

With the tire irons, force the top edge of the tire over the rim flange, working it over a small section at a time. See Figure 18.

Inflate the tire to a low pressure about 7 to 10 pounds. Bounce the wheel to settle the tire, making sure it is even all around the flange. Then inflate to the correct pressure.

## BRAKES

The brakes of the 1937 passenger cars incorporate the same fundamental principles that have been used so successfully by Chevrolet in the past. The service brakes are applied by means of hydraulic pressure from the main cylinder to each wheel cylinder. The emergency brake or hand brake is mechanically operated through a series of linkage and cables connected directly to the rear brake shoes.

Depressing the brake foot pedal applies the four wheel service brakes used for controlling the car when stopping. The hand brake lever provides a means of holding the car when parked or getting under way on a steep up-grade.

The pressure applied to the brake foot pedal forces the piston toward the valve seat, creating hydraulic pressure which causes the pistons in the wheel cylinders to move outward, bringing the brake shoes into contact with the wheel drums. When the foot pedal is released the force of the brake shoe springs releases the brakes.

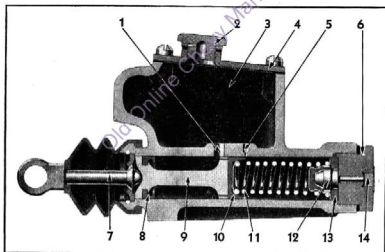


Fig. 19—Main Cylinder

- |                     |                        |
|---------------------|------------------------|
| 1—Inlet             | 8—Piston Cup—Secondary |
| 2—Filler Plug       | 9—Piston               |
| 3—Reservoir         | 10—Piston Cup—Primary  |
| 4—Housing Cover     | 11—Spring              |
| 5—Compensating Port | 12—Valve               |
| 6—End Plug          | 13—Valve Seat          |
| 7—Pedal Link        | 14—Outlet              |



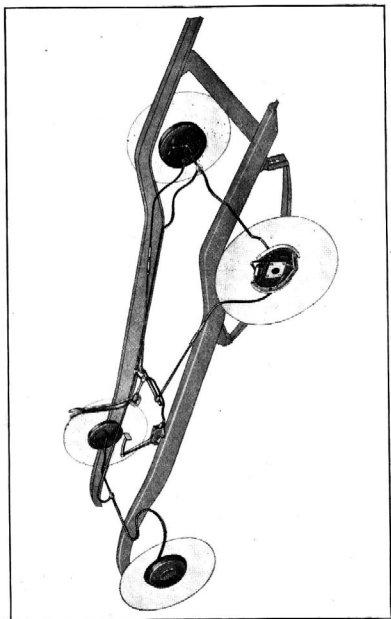
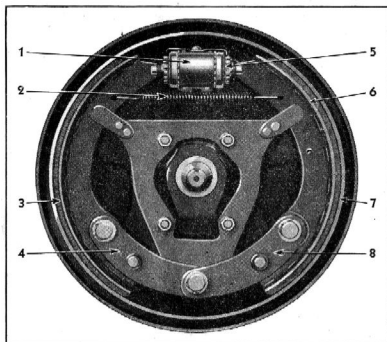


Fig. 20—Hydraulic Brake System

Figure 19 illustrates the main cylinder. Figure 20 illustrates the connections of the hydraulic brake main cylinder to the wheel mechanism and Figure 21 illustrates the hydraulic brake mechanism at the wheels.

Do not under any circumstances use other than "GM" hydraulic brake fluid, as it is the highest quality of brake fluid obtainable and its use will assure the long efficient life of all brake parts. The fluid level in the main cylinder should be checked periodically for proper level by your Chevrolet dealer.



*Fig. 21—Brake Mechanism at Wheels*

- |                           |                         |
|---------------------------|-------------------------|
| 1—Wheel Cylinder          | 5—Brake Adjusting Wheel |
| 2—Brake Retracting Spring | 6—Brake Shoe            |
| 3—Brake Lining            | 7—Brake Drum            |
| 4—Brake Actuating Link    | 8—Brake Actuating Link  |

These brakes have been designed and developed to give consistent and efficient service with long life under all conditions, and in order to keep them so, it is advisable that you follow these suggestions:

1st—Avoid sudden stopping unless necessary, as this puts unnecessary strain on the car.

2nd—Delay in adjusting brakes will create unnecessary repair bills. They are very simple and easy to adjust.

3rd—When slowing down never de-clutch your motor until the last moment, as the compression of the engine, on closed throttle, materially helps to slow down and stabilize the car when stopping.

4th—Re-line brakes only with Genuine "GM" linings, as this lining has been especially developed for this particular brake. Your Chevrolet dealer for a reasonable price will exchange the old brake shoes for new with new linings which are precision ground to fit the brake drum.

5th—Be sure that only Genuine "GM" hydraulic brake fluid is used in the system, as possible damage to the hydraulic brake parts may result through the use of inferior brake fluids.

For all normal adjustments it is only necessary to compensate for wear. Your Chevrolet dealer has competent mechanics trained by Chevrolet and all of the necessary equipment to render this service at a very nominal cost. The necessity for a brake adjustment is usually indicated by the foot brake pedal going practically to the floor panel when the brakes are applied.

## BRAKE SHOE ADJUSTMENT

1—Disconnect emergency brake rods from cables.

2—Jack up all four wheels so they will rotate freely.

3—To adjust brakes, remove adjusting hole covers from the flange plate at rear axle and remove the front wheels.

4—Insert screw driver in the adjusting hole in flange plate or brake drum and engage it in the teeth of the adjusting wheel. See Figure 22.

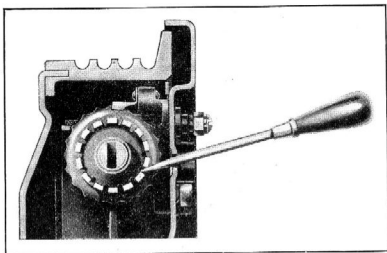
5—Turn the adjusting wheel clockwise, until the shoes cause a slight drag on the brake drum.

6—Turn the adjusting wheel back 4 notches. Each notch will be indicated by a faint click of the cover lock springs as the cover is turned. This backing off of the adjusting wheel moves the brake shoes away from the drums, to insure proper clearance between the shoe and the drum.

7—Replace adjusting hole covers.

8—Set emergency brake lever in full released position.

9—Pull end of emergency brake cable until all slack is removed.



*Fig. 22—Adjusting Rear Brakes*

10—Adjust clevis on the end of the brake rod so that holes in the clevis line up with the hole in the end of the cable.

11—Insert the clevis pin and cotter key. Tighten check nuts.

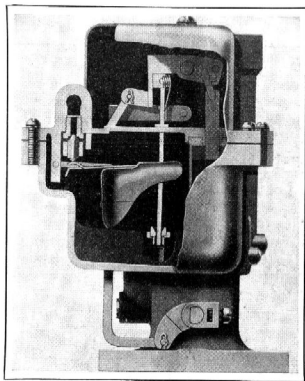
12—Check operation of emergency brakes. Loosen tight brake rather than tighten loose brake. Do not touch service brake adjustment to adjust emergency brakes.

13—Road test car, apply brakes to check action at light, medium and maximum pedal pressures.

## FUEL SYSTEM

### CARBURETOR

The down-draft carburetor contributes to the smooth, quiet operation and power of the Chevrolet valve-in-head engine. Down draft, as its name implies, eliminates the necessity of lifting air and gasoline from the carburetor, thus improving the breathing ability of the intake system without affecting its flexibility.

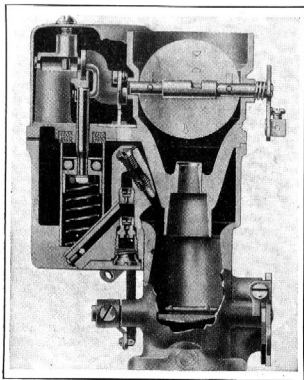


*Fig. 23—Carburetor Metering Rod and Jet*

This carburetor embodies a principle which employs three venturis, one located above and two below the level of the fuel in the float chamber. This triple venturi has the effect of increasing the suction on the first or primary venturi, causing the nozzle to start delivering fuel at very low air speeds. The nozzle enters

the primary venturi at an angle, discharging upwardly against the air stream. This angle secures an even flow of correctly proportioned and finely atomized fuel.

The fuel thus atomized in the primary venturi is kept centrally located in the air stream by the surrounding blanket of air passing into the second venturi and this process is repeated by the air in the main venturi. By this means the fuel is carried to the cylinders in a more perfectly atomized condition. This insulated atomization results in increased smoothness of operation at both low and high speeds.



*Fig. 24 — Carburetor Choke Valve and Accelerating Pump*

The mixture quality is controlled by a metering rod which operates within the metering rod jet, See Figure 23, and is operated by the throttle lever. There are two steps of different diameters on this metering rod. The large diameter, or economy step,

controls the fuel flow to about seven-eighths throttle, when the smaller diameter, or power step, becomes effective, giving full power for either high speed or hard low speed pulling. By this simple means both maximum power and greater economy can be had without changing the carburetor adjustment.

The choke consists of a butterfly valve, hinged in the center, one-half being spring controlled. See Figure 24. As soon as the engine starts, the hinged half of the valve opens and acts as an air valve during the warming up period. This prevents overloading and produces a smooth running mixture with a cold motor.

The accelerating pump, Figure 24, is of the pneumatic type and consists of a cylinder with a plunger containing an air bell and two check valves, one on the inlet and one on the outlet side. The upward movement of the plunger, when the throttle is closed, draws a small metered quantity of fuel into the bottom of the cylinder. The slightest opening of the throttle causes an immediate discharge through a jet pointing downward into the main venturi.

## CARBURETOR ADJUSTMENT

The carburetors are carefully tested and adjusted to the engine, before leaving the factory. Too often adjustments are made to the carburetor, when in reality, something else is causing uneven running or the engine has not thoroughly warmed up.

There are two adjustments on the carburetor, one for idling mixture and the other for idling speed. Both of these adjustments should be made together.

To adjust the idling mixture, proceed as follows: Open the idle adjusting screw from 1 to 2 turns open. Let engine idle. Try turning screw both ways from this position until the best setting is made.

To adjust for idling speed, proceed as follows: With the hand throttle on the instrument panel closed, set the throttle lever stop screw so that the engine runs at approximately 400 revolutions per minute. If the engine runs too fast, back the screw out. If too slow, turn it until the proper speed is obtained.

## ACCELERATING PUMP ADJUSTMENT

The lever which operates the accelerating pump plunger arm is provided with three adjustments or settings. See Figure 25. Medium stroke is the correct setting for ordinary temperatures and standard gasoline. Short stroke is for use in extremely hot climates, at high altitudes or with high test fuel. The long stroke is for use in extremely cold climates.

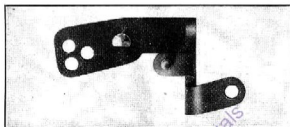


Fig. 25—Accelerating Pump Plunger Arm

To set this pump arm lever it is necessary to remove the cover from the top of the accelerating pump. When this cover is removed, the countershaft that operates the accelerating pump should be lubricated with graphite grease. To lubricate this shaft, fill the cover screw hole with graphite grease.

## FUEL PUMP

The fuel pump, Figure 26, is of the diaphragm type and is attached to the crankcase and is operated from an eccentric on the camshaft.

The diaphragm is composed of several layers of specially treated cloth which is impervious to gasoline and benzol. This cloth material is held between two metal discs and is pushed upward by a pump spring. This diaphragm, in its upward movement, almost fills the pump chamber so that, in its downward movement a very high vacuum is obtained, thus assuring high pumping capacity, even at low engine speeds.

The repeated movement of the diaphragm is possible indefinitely without injury, due to the extreme flexibility of this material. Further, the movement of the diaphragm occurs only when the carburetor needs fuel. When the carburetor needs fuel, this movement is directly proportional to the amount of gasoline used



by the engine. This means that in practically all normal driving conditions this diaphragm is pulsating in a movement of a few thousandths of an inch.

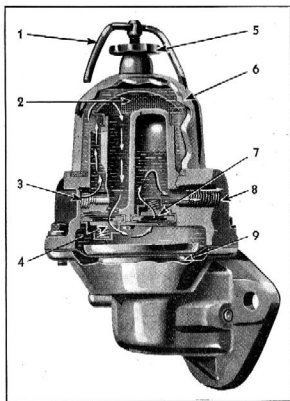


Fig. 26—Fuel Pump

- |                              |                      |
|------------------------------|----------------------|
| 1—Sediment Bowl Retainer     | 6—Sediment Bowl      |
| 2—Filter Screen              | 7—Outlet Valve       |
| 3—Inlet                      | 8—Outlet             |
| 4—Inlet Valve                | 9—Diaphragm Assembly |
| 5—Sediment Bowl Retainer Nut |                      |

This movement is controlled by linkage because, when the diaphragm is in the depressed position, due to sufficient fuel in the carburetor, the up and down movement of the fuel pump link ceases and the rocker arm spring keeps the rocker arm in contact with the eccentric on the camshaft.

## AIR CLEANER AND INTAKE SILENCER

The air which is taken into the carburetor to mix with the fuel is thoroughly cleaned in passing through the combined air cleaner and flame arrester mounted on the top of the carburetor at the air intake. Figure 27.

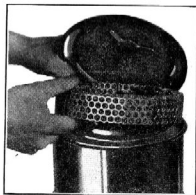


Fig. 27—Air Cleaner

Cleaning of the air is accomplished by a pad of woven copper gauze, through which the incoming air passes, depositing all particles of dust, dirt and grit on its oil covered edges. This metallic gauze pad also quenches any flame that may be caused by back-fire through the carburetor.

Located within the air cleaner is a resonance chamber so situated and proportioned to the larger intake chamber, that the roar and hiss of incoming air is completely silenced.

Under ordinary conditions, where the car is driven on pavement or surfaced roads, the air cleaner should be removed every 2000 miles and the dirt that has collected on the copper mesh cleaned out. This is done by removing the top cover and felt pad from the air cleaner, and slushing the cleaner element that contains the copper mesh in gasoline and then letting it drain and dry. After it is thoroughly cleaned in gasoline, the copper mesh should be dipped in motor oil and again drained, after which it is assembled to the air cleaner.

Under extreme conditions where the car or truck is operating on gravel or dusty roads all of the time, this cleaning operation must be done at more frequent intervals.

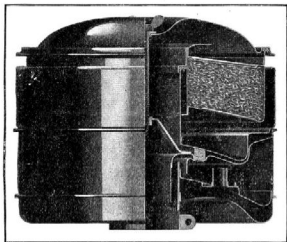
For service and special equipment a heavy duty air cleaner is available. This type is designed for direct attachment to down-draft carburetors. This cleaner is suitable for any kind of passenger car service where these units are operating in very dusty conditions and localities. Figure 28.

Its advantages are simplicity, ease of installation and ease of maintenance. There is no resistance in the cleaner to disturb

carburetion and the cleaning efficiency is very high. Extensive tests under severe conditions have shown a high cleaning efficiency.

In operation dusty air enters the cleaner through the opening between the shell and the top cover. It then passes down through an annular passage and strikes the shelf and reverses upward into the filter element.

The oil level extends about an eighth of an inch above the shelf and the oil on the shelf is picked up by the air stream and carried up into the filter element to provide washing means. The purpose of the shelf is to meter the oil going into the filter element in order to keep only a pre-determined amount of oil in circulation and thus prevent oil pulling over into the carburetor.



*Fig. 28—AC Heavy Duty Air Cleaner*

The filter element is, therefore, automatically oiled and washed by the oil picked up by the incoming air. All of dirt not directly precipitated into the oil when the air reverses above the shelf is caught on the oil wetted copper ribbon filter element and washed back into the oil sump where it gravitates out of circulation in form of mud. The cleaned air passes out of the filter element through the openings to the carburetor. (Figure 28.)

The oil base stamping is provided with an inward curl "S" to prevent oil splashing out of the cleaner on sharp turns, sudden stops, or rough roads.

All possible points of dust leakage into the carburetor have been provided with seals. The top cover, which is removable for the purpose of easy inspection and easy washing, is sealed at its connection with the filter element by a gasket.

Possible dirt leakage at the connection to the carburetor is prevented by a felt gasket which bears against the top of the carburetor air horn.

This heavy duty air cleaner is quickly interchanged with the silencer and air cleaner installed on the carburetor as standard equipment and will not affect the power and economy in any way. Oil of not less than S. A. E. 50 viscosity **MUST** be used and the level must be maintained. One pint of this oil will fill the cleaner to its proper level.

Servicing of this cleaner is an important operation and must be performed as follows:

Remove the air cleaner from the carburetor. Remove the wing nut from the top and remove the cover. Remove the filter element assembly. Caution: Do not pry this part loose if it sticks. It must be removed by hand because you may damage the filter element flange, which must lie flat against the body to insure a tight seat at this point to prevent air leaks when the cover is assembled.

Empty the oil out of the cleaner and clean out all oil and accumulated dirt. Wash body with clean gasoline and wipe dry. Wash filter element by slushing up and down in clean gasoline. Dry thoroughly, either with an air hose or by letting it stand until dry. Fill the body of the cleaner with one pint of oil of not less than S. A. E. 50 viscosity. It is not necessary to re-oil the filter element as this is done automatically when the car driven.

Reassemble the filter element to the body of the cleaner, being sure that the flange sets flat against the top flange of the body. Reassemble the cover, making sure that the gasket is clean and in good condition over its entire surface so that a tight seat is obtained at this joint. Put on wing nut.

Reassemble the cleaner to the carburetor. The cleaner must be put on tight and set down so that the felt pad rests against the carburetor to assure a good seat at this point. Tighten clamp.

The periods at which this procedure must be followed will vary greatly according to the particular conditions under which the car or truck is operating. Experience only will tell what this period may be. For very extreme conditions, such as road construction work, etc., once a day is necessary but never longer than twice a week. For other conditions, experience will govern the proper cleaning periods.

## COOLING SYSTEM

The function of the cooling system is to keep the engine at its most efficient operating temperature under all driving conditions.

Chevrolet's cooling system is extremely effective. This is due to the fact that Chevrolet's valve-in-head engine design provides large water area around the cylinder walls, spark plugs and exhaust valves. Because the flow of the water is not restricted at any point, Chevrolet's engine does not develop any "hot spots."

The radiator is of the ribbed cellular type and is scientifically designed to provide adequate cooling at all speeds. It is strong, yet retains all of the flexibility found in this type of construction.

An important factor in the efficiency of this radiator is a baffle chamber in the upper tank. This chamber is an inverted "V," see Figure 29, and is located at the center of the upper tank around the inlet fitting. At high speeds and on heavy pulls the water temperature increases, building up pressure in the baffle chamber. This pressure forces the hot water downward through the center passages of the core, where it is cooled by the fan blast. The hot water in the baffle chamber which cannot be handled instantly by the center core passages, is discharged through the ends of the baffle chamber and is diffused by contact with the water in the upper part of the tank.

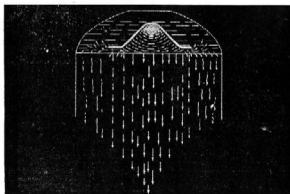


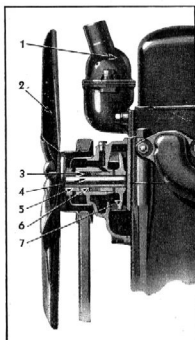
Fig. 29

The water pump, Figure 30, circulates the water in the cooling system. It is a self contained unit and is of the self adjusting, centrifugal type with a capacity sufficient to take care of the cooling needs of the Chevrolet engine.

The packings are contained in the water pump body and are continuously expanded against the rotor shaft and housing by a coil spring, eliminating the necessity of adjusting.

The bushings in the water pump are lubricated through an oil cup located just back of the fan. This cup leads to a large oil reservoir which automatically feeds oil to the self-oiling bushings. This reservoir should be filled with a good grade of engine oil every 1000 miles.

Intelligent care and the proper servicing of the cooling system are necessary to maintain its maximum efficiency.



- 1—Thermostat Housing
- 2—Fan
- 3—Packings
- 4—Shaft
- 5—Shaft Bushing
- 6—Packing Springs
- 7—Impeller

*Fig. 30—Water Pump*

To keep the cooling system functioning properly, keep the radiator core openings free of mud and dust at all times in order to permit a maximum circulation of air around the water passages.

The entire circulating system should be thoroughly flushed out at regular intervals. This can be accomplished with any of the several types of radiator flushers available. It will be found

that the systems that employ the reverse system of flushing will prove most efficient in performing this operation.

When draining the cooling system open the drain cock at the bottom of the radiator as well as the drain cock at the left lower side of the cylinder block.

## ANTI-FREEZING SOLUTIONS

In selecting anti-freezing solutions for winter operation, the local conditions and the type of service must be considered. The following information is given to enable the individual owner to more intelligently select the anti-freezing solution best suited to meet his own conditions.

The available commercial materials for preparing anti-freezing solutions for automobile radiators are denatured alcohol, methanol (synthetic wood alcohol), distilled glycerine and ethylene glycol.

### DENATURED ALCOHOL, METHANOL, AND "GM"

Denatured alcohol and methanol solutions are, at present, the most generally used anti-freezing solutions. Denatured alcohol and methanol are widely distributed, afford protection against freezing, and are not injurious to the materials used in the cooling system.

There are two principal objections to denatured alcohol and methanol. These materials are lost by evaporation, especially on heavy runs, and unless the solution in the radiator is tested periodically and sufficient anti-freeze added to replace the loss by evaporation, the motor or radiator, or both, are likely to be damaged by freezing. The car finish is damaged by contact with denatured alcohol or methanol solutions or vapors, and any material accidentally spilled on the finish should be flushed off immediately with a large quantity of water.

Methanol, for anti-freeze purposes, is sold in the United States in the correct concentration to give the same protection against freezing as denatured alcohol.

Direction for preparing Anti-Freezing solutions from Denatured Alcohol 94% (188° proof), Methanol (Anti-Freeze Grade), and "GM" is as follows:

COMPARATIVE PROTECTION CHART

To protect a 14-quart Cooling System	20° F. Qts.	10° F. Qts.	0° F. Qts.	-10° F. Qts.	-20° F. Qts.
Requires of Genuine GM Anti-Freeze	2	3¼	4¼	5¼	5¾
Requires of Alcohol	2¾	4¼	5¼	6	7
Requires of Anti-Freeze Methanols	2½	4	5¼	6	7

## GLYCERINE AND ETHYLENE GLYCOL

Distilled glycerine and ethylene glycol solutions are, in first cost, more expensive than alcohol but, as they are not lost by evaporation, only water need be added to replace evaporation losses. Any solution lost mechanically, such as by leakage, foaming, etc., must be replaced by additional new anti-freezing solution. These solutions, under ordinary conditions, are not injurious to the car finish.

The principal objections to glycerine and ethylene glycol are the tendency of these solutions to loosen the scale and iron rust which forms in the water passages of the cylinder block and head, and the difficulty of securing and maintaining tight leak-proof connections. It is absolutely necessary to thoroughly clean and flush the entire cooling system before glycerine or ethylene glycol is used. It is also necessary to tighten or replace the cylinder head gaskets, hose connections and pump packing. The cylinder head gaskets must be kept tight to prevent the solution from leaking into the crankcase where it might cause gumming and sticking of the moving parts. The pump packing must be kept tight to prevent air from being drawn into the cooling system, in order to avoid foaming and other difficulties which may result when air is present.

Ethylene glycol (Prestone) sold in the United States for anti-freezing purposes and radiator glycerine, produced under the formula approved by the Glycerine Producer's Association, are chemically treated to overcome the principal difficulties mentioned in the above paragraph, and under normal operating conditions with tight hose connections and cylinder head gaskets, should be satisfactory for use in the cooling system.

Radiator glycerine or ethylene glycol should be used in accordance with the instructions, and in proportions recommended by the anti-freeze manufacturer.



## TESTING SOLUTIONS

In using a hydrometer to determine the temperature at which the solution will freeze, the test must be made at the temperature at which the hydrometer is calibrated. If the solution is warmer or colder, it must be brought to this temperature or large errors may result. In some cases these errors may be as large as 30 degrees Fahrenheit. Freezing point hydrometers are not interchangeable, a different float is required for denatured alcohol, methanol, glycerine and ethylene glycol.

## OTHER ANTI-FREEZING SOLUTIONS

Salt solutions, such as calcium or magnesium chloride, sodium silicate, etc., honey, glucose and sugar solutions and oils are not satisfactory for use in automobile radiators.

## ELECTRICAL SYSTEM

The electrical system used on Chevrolet passenger cars is called the double unit system with ground return and consists of the following units: generator, starting motor, distributor, ignition coil, wiring harness, storage battery, circuit breaker, ammeter, gasoline gauge, horn, ignition lock, lighting and foot control switches.

## GENERATOR

The function of the generator is to convert a small amount of mechanical energy from the engine of the car into electrical energy, which is carried through wiring to the battery, where it is stored for future use.

The generator used on Chevrolet passenger cars is of the "lamp load" type and is exceptionally large in size and provides ample current to keep the battery fully charged under all normal conditions. The ventilating fan next to the pulley draws air through the generator and keeps it operating at a cooler temperature, thereby permitting higher output without endangering the generator.

The output control operates through the light switch on the instrument panel. Pulling the switch out to the first position shorts out a resistance in the field circuit in the generator, thereby increasing its charging rate. When the light switch is pulled all of the way out, the charging rate is increased automatically to compensate for the additional load thrown on the lighting system.

## STARTING MOTOR

The starting motor has only one function to perform—it cranks the engine in the same manner as was formerly done by hand.

The starting motor is mounted on the flywheel housing, having a pinion which automatically engages the flywheel when the accelerator or starting pedal is depressed.

As soon as the engine is started, the pinion is automatically removed from the flywheel.

## BATTERY

The storage battery may be considered a tank or reservoir in which energy from the generator is stored until it is required.



Fig. 31

Keep all cells of the battery filled with distilled water to a level of  $\frac{1}{2}$  inch above the top of the plates. Your Chevrolet dealer will gladly perform this service for you on a no-charge basis. Register your battery with him. Ask for the battery service record shown in Figure 31.

## LIGHTING SYSTEM

The lighting system is controlled from the switch on the instrument panel and the foot switch on the floor panel.

The headlamps used on Chevrolet cars embody the depressible beam and fixed focus feature, that is, the 32-21 candle power bulbs are provided with two separate filaments, one being exactly in the center of the reflector and the other filament slightly above the center of the reflector.

The operation of the depressible beam is effected by means of a foot switch located on the floor panel, close to the clutch pedal.

The headlamps are properly aimed at the factory and re-aiming should not be necessary, unless the adjustment of the headlamp has been disturbed or a burned out bulb has been replaced with a new one. In this case we recommend that you take your car to your Chevrolet dealer, who has the necessary facilities to properly perform this operation.

## BODIES

The all steel type of body construction has been developed by Fisher Body over a period of years and permits designs of greater beauty and at the same time provides greater strength, greater durability and greater safety. These bodies are made entirely of steel to provide the very maximum of safety.

The solid steel Turret Top is constructed of a solid sheet of seamless steel, drawn and formed from a single piece. It places over the occupants of the car, where it is most needed, a protection of steel. This solid steel roof is further reinforced by sturdy bows of steel stretching from one side of the roof to the other. This construction provides increased beauty, and along with it greater strength and safety. It will not leak or rattle and is thoroughly insulated against heat, cold and sound.

Five sheets of steel are needed for constructing the entire exterior surface of each body. They are electric welded together into one single, rugged unit of steel.

The body floor, like the roof and sides, is also formed from a single sheet of heavy gauge steel, extending from the rear of the car to the front end structure. The forward end of this steel floor is bent upward to form the toe board. Removable steel panels in this floor provide easy access to the foot pedals, transmission, clutch and the storage battery.

## CARE OF THE FINISH

The Duco finish of your car possesses the merit of improving with age, at least for several months, if the car is properly cared for and not subjected unduly to the elements.

An occasional polishing with Genuine GM polish will restore the luster of the finish. This polish is a cleaner, as well as a polish. It softens and removes the dirt film or "scum" which soap and water cannot clean off. It also revives weathered Duco, restoring its original beauty and luster. Do not become alarmed if the polishing cloth becomes stained with the color of the car, as this represents a weathering of the finish. Use a dry, clean cloth for rubbing off the polish and working up a beautiful finish.

If alcohol, or anti-freeze compounds containing alcohol, are spilled on the finish of the car, they should be immediately flushed off with water. If this is not done at once, serious damage to the finish will result.

## CARE OF THE UPHOLSTERY

*Dust*—Dust and dirt particles that fall on the surface of automobile upholstery should be removed every few weeks—more often with constant, hard driving. This can be done readily with a whisk-broom, carpet beater, or vacuum cleaner. For general cleaning and dusting, the seats should be removed. In so doing, dirt along the sides and rear of the seats falls to the bottom and can easily be wiped off. If beaten, the cushion should be held upside down so that all the dust will fall away from it. Blows should be lightly administered. If a whisk-broom or vacuum cleaner is used, it is not absolutely necessary, but preferable, to remove the seats.

*Spots*—Before attempting to remove spots and stains from an upholstery fabric, it is necessary to determine as accurately as possible (1) The type of fabric, (2) The type of fibres used in the construction of the fabric, (3) The nature and age of the stain, (4) The effect of the stain-removal agent upon the color, structure, and general appearance of the fabric. It is essential that stains be removed from upholstery as soon as possible after they have been made. If they are allowed to remain on the fabric for some time, they very often become oxidized and removal is difficult, if not impossible.

*Washing*—Mohair Velvet is the only automobile upholstery that can be completely washed safely with soap and water.

Use lukewarm water and a neutral soap. The suds should be good and frothy, not watery. They should be applied in moderate quantities with a damp cloth, sponge, or soft brush. Rub with the pile, not against it. Soap suds should be removed with a clean damp cloth or sponge. Then wipe the surface several times with a dry cloth. While the material is still damp, brush it lightly with a whisk-broom or brush of medium stiffness. Permit air to circulate freely over the wet upholstery. When dry, brush again against the pile.

*Steaming*—The surface of Mohair Velvet can readily be freshened by steaming. Spread a damp cloth over the surface and touch a hot flat-iron to it lightly. The steam that is thereby driven down into the fibres will restore them to the erect position. Another method is to take a cloth or heavy towel, wrung out of very hot water and spread it over the upholstery. Leave the cloth in place for ten minutes or so. It may be necessary to repeat the process a few times. While still damp, the upholstery should be brushed lightly with a whisk-broom or brush of medium stiffness. When thoroughly dry, the material should again be brushed. Brush against the pile. After this treatment, the upholstery will look fresh and new.

## CHAPTER III

# GENERAL LUBRICATION

*Your Chevrolet Dealer is equipped to render complete lubrication service. We recommend that you take advantage of his specialized equipment and trained men when in need of this type of service.*

*Oils and greases are much cheaper than repair bills and should be applied regularly if you are to secure a maximum of useful service from your car. It is consequently important that the car be lubricated on the basis of miles operated and that the proper grade of lubricant, as noted in the following, be used.*

## ENGINE LUBRICATION

Proper selection of the oil to be used will add much to the performance, reliability, economy and long life of your engine.

It is imperative that the recommended light oils be used in the engine during the "breaking-in" period.

Light oils assure a better "breaking-in" of the engine, as they assure ease of starting the engine; prompt flow of a sufficient quantity of oil to the bearings; less friction between moving parts; less wear of moving parts, etc.

Carefully follow the instructions for the "breaking-in" of your engine, shown on the windshield of all new passenger cars.

When starting a cold engine, it will be noted that the oil gauge on the instrument panel will register a high oil pressure. As the engine warms up, the pressure will drop until it reaches a point where changes to higher speeds will raise the pressure very little, if at all.

*Never run your car at high speeds when the oil gauge hand, or pointer, is above 25 pounds pressure.*

## LUBRICATION FIRST 2000 MILES

*It is recommended that the oil in the crankcase of the engine of your new car be used for the first 500 miles.*

At the end of the first 500 miles it is good insurance to drain the crankcase—when hot—and refill to the proper level with fresh oil not heavier in body than S. A. E. No. 20 (preferably 10-W or 20-W oil).

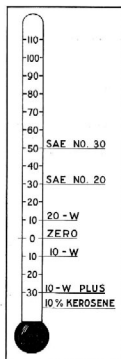


Fig. 32

## LUBRICATION— AFTER 2000 MILES

Figure 32 shows the lowest temperature at which the indicated grades of oil will permit easy starting.

### WINTER—FALL—SPRING

During the winter, fall, and spring months when temperatures vary widely, you are cautioned to select an oil which will permit easy starting at low temperatures.

In selecting the oil estimate the lowest temperature expected during the period the oil is to be used. Then locate on Figure 32 the grade of oil which will permit easy starting at the lowest temperature expected. For example: If the lowest temperature expected is zero degrees F. (0 degrees C.) 10 W oil should be selected; whereas, if the lowest temperature is 20 degrees F. either 10-W or 20-W oil may be used.

10-W oil plus 10 %kerosene is recommended only for those territories where temperatures fall below zero (0 degrees F.) for protracted periods.

### SUMMER

The use of the 20-W, and S. A. E. No. 20 oils during the summer months will permit better all-around performance of the engine than will the heavy body oils, with no appreciable increase in oil consumption.

S. A. E. No. 30 oil **may** be used if it is expected that temperatures will be consistently above 80 degrees F.

## S. A. E. VISCOSITY NUMBERS

The viscosity of a lubricant is simply a measure of its body or fluidity. The S. A. E. viscosity numbers constitute a classification of lubricants in terms of viscosity, or fluidity, but without reference to any other characteristics or properties.

*The refiner or marketer supplying the oil is responsible for the quality of its product. Their reputation is the car owners' best indication of quality.*

The S. A. E. viscosity numbers have been adopted by practically all oil companies and no difficulty should be experienced in obtaining the proper grade of lubricant to meet seasonal requirements.

## OIL RESERVOIR—CHANGING OIL

Oil is carried in a reservoir located at the bottom of the crankcase and is filled through a filler tube on the right side of the engine just back of the generator.

Fill the oil reservoir to the proper level with a well refined oil of the viscosity recommended above.

The Oil Gauge Rod, Figure 33, is marked "Full" and "Low." These notations have broad arrows pointing to the level lines.

The oil level should be maintained between these two lines, neither going above the "full" line nor under the "low" line. Check the height of the oil level frequently and add oil when necessary.

## CRANKCASE OIL CLASSIFICATIONS

Viscosity Number	Seconds Viscosity (Saybolt Universal)			
	0° F.		130° F.	
	Min.	Max.	Min.	Max.
10-W (*)	5,000	10,000	...	...
20-W (**)	10,000	40,000	...	...
S.A.E. 20	.....	.....	120	185
S.A.E. 30	.....	.....	185	255

\* Sub-zero pour test

\*\* Zero pour test

The frequency with which the oil should be changed, subsequent to the change at the end of the first 500 miles, is governed by the mechanical condition of the car and on how carefully you, as a driver, handle it and care for it.

*Oil changes may be required more frequently in the winter than in summer, due to the necessity for using the choke during the winter months. The excessive use of the choke causes crankcase dilution.*

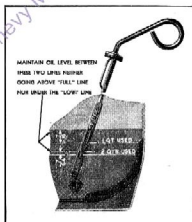


Fig. 33 Oil Gauge Rod

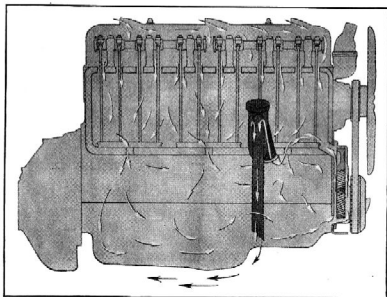
## CRANKCASE DILUTION

A phase of engine oil deterioration, probably the most serious of all, is that of crankcase dilution.

By crankcase dilution, we mean a thinning of the oil on account of certain portions of the gasoline or fuel leaking by the pistons and rings and mixing with the oil.



Leakage of fuel, or fuel vapors, into the oil reservoir mostly occurs during the "warming-up" period when the fuel is not thoroughly vaporized and burned.



*Fig. 34—Crankcase Ventilation*

#### AUTOMATIC CONTROL DEVICES TO MINIMIZE CRANKCASE DILUTION

Your Chevrolet engine is equipped with automatic devices which aid greatly in minimizing the danger of crankcase dilution.

Rapid warming up of the engine is aided by the thermostatic water temperature control which automatically prevents circulation of the water in the cooling system until it reaches a pre-determined temperature.

Thermostatic heat control on the exhaust manifold which, during the warming-up period, automatically directs the hot exhaust gases against the center of the intake manifold, greatly aiding the proper vaporization of the fuel.

The down-draft carburetor is an aid to easy starting, thereby minimizing the use of the choke. Sparing use of the choke reduces danger of raw, or unvaporized, fuel entering the combustion chamber and leaking into the oil reservoir.

An efficient crankcase ventilating system drives off fuel vapors and aids in the evaporation of the raw fuel and water which may find its way into the oil reservoir.

#### CONTROL BY CAR OWNER UNDER ABNORMAL CONDITIONS

Ordinarily the above automatic control devices will minimize, or eliminate, the danger of crankcase dilution.

However, there are abnormal conditions of service when the car owner must aid in the control of crankcase dilution.

Short runs in cold weather, such as city driving, do not permit the thorough warming up of the engine nor the efficient operation of automatic control devices.

It is recommended that the oil be changed more often when the car is subject to this type of operation.

Poor mechanical condition of the engine, such as scored cylinders, poor ring fit, "sloppy" or loose pistons, faulty valves, poor ignition and incomplete combustion of fuel will increase crankcase dilution.

Keep your car in good mechanical condition.

Poor fuels which contain portions hard to ignite and slow to burn will increase crankcase dilution.

Use good fuel.

#### WATER IN CRANKCASE

Serious lubrication troubles may result in cold weather by an accumulation of water in the oil reservoir. This condition is as a rule little understood by the car owner. To demonstrate the chief cause of water in the oil reservoir, hold a piece of cold metal near the end of the exhaust pipe of the engine and note the rapid condensation and collection of drops of water on it. The exhaust gases are charged with water vapor and the moment these gases strike a cold surface, will condense, forming drops of water.

A certain amount of these gases passing the pistons and rings, even under the most favorable conditions, will cause the formation of water in the oil reservoir, in a greater or less degree, until the engine becomes warm. When the engine becomes thoroughly warm, the crankcase will no longer act as a condenser and all of these gases will pass out through the crankcase ventilator system.

Short runs in cold weather, such as city driving, will aggravate this condition.

## CORROSION

Practically all present-day engine fuel contains a small amount of sulphur which, in the state in which it is found, is harmless; but this sulphur on burning, forms certain gases, a small portion of which is likely to leak past the pistons and rings and re-acting with water, when present in the crankcase, form very corrosive acids. The more sulphur in the fuel, the greater the danger from this type of corrosion. This is a condition which we cannot wholly avoid, but it may be reduced to a minimum by proper care of the engine.

As long as the gases and the internal walls of the crankcase are hot enough to keep water vapor from condensing, no harm will result; but when an engine is run in low temperatures, moisture will collect and unite with the gases formed by combustion; thus, acid will be formed and is likely to cause serious etching or pitting. This etching, pitting or corrosion, when using fuel containing considerable sulphur, manifests itself in excessively rapid wear on piston pins, camshaft bearings and other moving parts of the engine, oftentimes causing the owner to blame the car manufacturer or the lubricating oil when in reality the trouble may be traced back to the character of fuel used, or a condition of the engine, such as excessive blowbys or improper carburetor adjustment.

## WATER PUMP LUBRICATION

There is an oil cup, in the water pump body, just back of the fan belt pulley, which should be lubricated every 1000 miles. The oil cup should be filled with a good grade of engine oil.

## CLUTCH THROWOUT BEARING LUBRICATION

Chevrolet employs the carbon type of clutch throwout bearing, which is lubricated from a reservoir, with an oiler on top.

This construction eliminates the necessity for frequent lubrication.

*It is only necessary to refill the clutch throwout collar when, upon releasing the clutch, a "squeaking" noise occurs.*

To fill the clutch throwout bearing collar with oil, remove the cover plate on the toe and floor board and the inspection cover on the clutch housing. It should be filled with S. A. E. No. 160 oil in summer and S. A. E. No. 90 in winter.

## CARBURETOR ACCELERATING PUMP COUNTERSHAFT LUBRICATION

It is important that the countershaft, that operates the carburetor accelerating pump, be lubricated at least once every 5,000 miles. To lubricate this shaft, remove the screw attaching the dust cover and fill the threaded hole with graphite grease.

## STARTING MOTOR LUBRICATION

Every 1,000 miles, lubricate the starting motor by putting a few drops of light oil, or engine oil, in the oil cup.

## GENERATOR LUBRICATION

Every 1,000 miles, lubricate the generator by putting a few drops of a light oil, or engine oil, in the 2 oil cups.

## DISTRIBUTOR LUBRICATION

The distributor is equipped with a grease cup. Fill this cup with a soft, smooth, cup grease and turn down every 1,000 miles.

## TRANSMISSION LUBRICATION

Keep the transmission case filled with the lubricant recommended, so that the oil level stands even with the opening in the filler boss on the right side of the case.

The transmission in your car is quiet and easy shifting. **DO NOT FAIL TO CHANGE FROM SUMMER GRADE OF LUBRICANT TO THE WINTER TYPE WHEN COLD WEATHER APPROACHES. FAILURE TO CHANGE THE LUBRICANT MAY RESULT IN DAMAGE TO GEARS AND BEARINGS.**

When seasonal lubricant changes are made, it is a good plan to wash out the transmission with a light oil to remove foreign substances, such as grit or dirt. To do this, remove the drain plug at the bottom of the transmission case, and allow the oil to drain off, after which flush out the case thoroughly and refill with the oil recommended below.

## TRANSMISSION LUBRICANTS

During the summer months a lubricant having the viscosity or body of a S. A. E. No. 160 oil should be used.

During the winter months, or when the atmospheric temperature is expected to be consistently under 50° F., a lubricant having the viscosity or body of a S. A. E. No. 90 oil should be used.

For extreme low temperatures, or when lubricants of the lower S. A. E. viscosity number cannot be obtained, it may be desirable to thin the lubricant with a low viscosity low pour test engine oil, or with kerosene. If this procedure is necessary, the addition of 35% of an oil such as 20W, or 10% kerosene, will reduce the viscosity of a S. A. E. No. 160 lubricant to that of a S. A. E. No. 90 lubricant.

Lubricants containing solid material in suspension are undesirable for ball or roller bearing lubrication.

For your convenience, a table is appended, listing the proper classification for various temperature conditions.

OPTIONAL MIXTURES TO APPROXIMATE  
EQUIVALENT VISCOSITY

Temperature Range	S. A. E. No. 160	S. A. E. No. 90	Kerosene	S. A. E. No. 160	20-W Oil	S. A. E. No. 160	Kerosene	S. A. E. No. 90	20-W Oil
Above 50 degrees F.	100%								
50 degrees F. to Zero degrees F.		100%		65%	35%	90%	10%		
Below Zero degrees F.		90%	10%	40%	60%	80%	20%	60%	40%
Extreme Temperatures Below Zero When Hard Shifting of Transmission Gears is Encountered.		80%	20%	10%	90%	70%	30%	55%	45%

*Caution: Do not under any circumstances add kerosene to Hypoid Gear Lubricant.*

## UNIVERSAL JOINT

The universal joint is directly connected to and receives its lubrication from the transmission. The pipe plug in the housing is used to fill the universal joint at the time of assembly.

## REAR AXLE LUBRICATION

Your car is equipped with a "Hypoid" rear axle. A LUBRICANT BLENDED TO PROVIDE PROPER LUBRICATION FOR "HYPOID" REAR AXLES MUST BE USED. Your Chevrolet dealer has "Hypoid Lubricants" and you are urged to have him lubricate the rear axle of your car.

# 1937 CHEVROLET MASTER DE LUXE MODELS "KNEE ACTION"

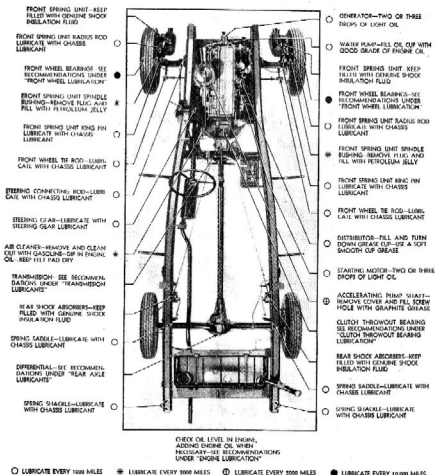


Fig. 35—Lubrication Chart

The axle of your car, as you receive it, is filled with a "Hypoid Lubricant" suitable for "Year-Around" service.

Seasonal changes of the lubricant are not required but it is recommended that you have your dealer drain the axle housing and refill with fresh "Hypoid Lubricant" twice a year or every 6,000 miles.

## FRONT WHEEL LUBRICATION

The front wheels run on ball bearings. It is necessary to remove the wheels to lubricate the bearings. The bearing assemblies should be cleaned, and the bearing ball retainer packed with a high melting point front wheel bearing grease.

*Do not pack the hub between the inner and outer bearing assemblies nor the hub cap, as this excessive lubrication results in the grease working out into the brake drums and lining.*

*In mounting the front wheels, great care must be taken to properly adjust the bearings; an operation that requires mechanical skill.*

## REAR WHEEL LUBRICATION

The rear wheel bearings receive their lubrication from the rear axle. Additional lubrication of the bearings is unnecessary.

## SPRING SHACKLES

The spring shackles and saddles are equipped with pressure gun fittings, and should be lubricated with the lubricant recommended under "chassis lubricants."

**Caution:** Rubber bushings are used at the front of each rear spring. These bushings must not be lubricated or sprayed with oil.

## SHOCK ABSORBERS

The spring shock absorbers should be kept filled with a low viscosity (light body) shock absorber fluid, that has a pour test not higher than 30° below zero.

The same fluid is used both summer and winter and will have similar operating characteristics the year around.

The shock insulation fluid recommended should have a viscosity range of from 70 to 80 seconds at 100° F. (Sayboldt Universal) and should not exceed 975 to 1,000 seconds at 20° F. This type of fluid is carried by all Chevrolet dealers.

*Do not, under any circumstances, use a shock insulation fluid heavier in viscosity, or body, than that recommended above. Heavy body fluids are detrimental to the proper functioning of the unit.*

# 1937 CHEVROLET MASTER MODELS WITHOUT "KNEE ACTION"

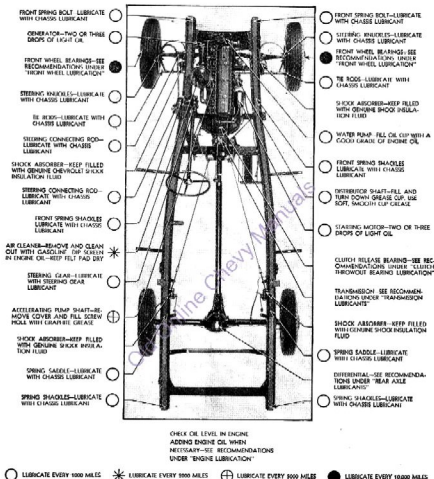


Fig. 36—Lubrication Chart



## CHASSIS LUBRICATION

For chassis lubrication, consult the lubrication chart. Figures 35 and 36 show the points to be lubricated and how often the lubricant should be applied.

### CHASSIS LUBRICANTS

The term "chassis lubricant" as used in this instruction book, describes a semi-fluid lubricant designed for application by commercial pressure gun equipment. It is composed of mineral oil (300 to 500 seconds Saybolt Universal viscosity at 100° F.) combined with approximately 8% soap, or soaps, which are insoluble in water.

The addition of the soap decreases the tendency of the lubricant to leak from the bearings in service.

Most of the chassis lubricants on the market are of the type recommended above.

## HYDRAULIC BRAKE FLUID

Your Chevrolet dealer has the proper hydraulic brake fluid for the brake system of your car.

## STEERING GEAR LUBRICATION

The steering gear may be lubricated with steering gear lubricant. Such lubricants are composed of mineral oil (275 to 325 seconds Saybolt Universal viscosity at 100° F.) combined with approximately 4% to 6% soap, or soaps, which are insoluble in water.

The pipe plug is installed at this point to prevent over-lubrication, generally occasioned by the use of a pressure gun.

Over-lubrication of this unit might result in forcing grease up the steering gear tube to the horn button and steering wheel.

## DE LUXE KNEE-ACTION CARS ONLY

### FRONT SPRING UNIT KING PIN AND MISCELLANEOUS PARTS

Front spring unit king pins, tie rods, steering arms, and other parts which are equipped with pressure gun lubrication fittings, should be lubricated with the lubricant recommended under "chassis lubricants."

## FRONT SPRING UNIT LUBRICATION

### FRONT SPRING UNIT HOUSING

The front spring unit housings should be kept filled to the level of the filler plug with a low viscosity fluid, that has a pour test not higher than 30° below zero.

The same fluid is used both summer and winter and will have similar operating characteristics the year around.

The fluid recommended should have a viscosity range of from 70 to 80 seconds at 100° F. (Sayboldt Universal) and should not exceed 975 to 1,000 seconds at 20° F. This type of fluid is carried by all Chevrolet dealers.

*If there are any indications of oil leaking from the housings, inspect gaskets and seals and replace them if necessary.*

*Do not, under any circumstances, use a fluid heavier in viscosity, or body, than that recommended above. Heavy body fluids are detrimental to the proper functioning of the unit. This fluid is carried by all Chevrolet Dealers.*

### FRONT SPRING UNIT SPINDLE BUSHING

Every 2,000 miles, the front spindle bushing should be lubricated. To do this, remove the plug at the inner end of the spindle and pack the reservoir with a lubricant such as soft cup grease, vaseline, or petrolatum. Passages from this reservoir carry the lubricant through the spindle to the bearing surface.

The slotted pipe plug is installed at this point to prevent over-lubrication, generally occasioned by the use of a pressure gun. Over-lubrication results in grease working out into the brake drum and linings.

## REAR SPRING LUBRICATION

The Master DeLuxe rear springs are enclosed in metal covers. The spring leaves are coated and the covers are filled with a special graphite grease at the time the springs are assembled on the car.

Should the car owner find it necessary to lubricate the spring leaves, or refill the spring covers, a soft, smooth, cup grease, to which 8% to 10% of graphite has been added, should be used.

## CHAPTER IV

# GENERAL INFORMATION

### CHEVROLET STANDARD WARRANTY

It is expressly agreed that there are no warranties, expressed or implied, made by the Dealer or the Manufacturer on Chevrolet motor vehicles, chassis or parts furnished hereunder except as follows:

"The Manufacturer warrants each new motor vehicle (including original equipment placed thereon by the manufacturer except tires), chassis or part manufactured by it to be free from defects in material or workmanship under normal use and service, its obligation under this warranty being limited to making good at its factory any part or parts thereof which shall, within ninety (90) days after delivery of such vehicle to the original purchaser or before such vehicle has been driven 4,000 miles, whichever event shall first occur, be returned to it with transportation charges prepaid and which its examination shall disclose to its satisfaction to have been thus defective. This warranty being expressly in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on its part, and it neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale of its vehicles. This warranty shall not apply to any vehicle which shall have been altered by anyone other than the manufacturer, or repaired outside of an authorized Chevrolet Service Station in any way so as, in the judgment of the manufacturer, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident."

The Dealer agrees to install any part or parts furnished under the Manufacturer's warranty on the motor vehicle without charge to the owner of such motor vehicle.

This warranty does not apply to second-hand cars or cars not mentioned above.

### POLICY

The Dealer also agrees to promptly perform and fulfill all terms and conditions of the Owner Service Policy.

## REPAIR PARTS

Genuine Chevrolet parts manufactured to the same rigid specifications as the parts used in the original assembly of the car, are carried in stock by Authorized Chevrolet Service Stations.

Use only Genuine Chevrolet parts for replacement purposes because they are better and cheaper. They are sold at uniform prices throughout the United States. Printed price lists published by the Chevrolet Motor Company are open to the inspection of owners at any Authorized Chevrolet Dealer's establishment.

## SERVICE CHARGES

Charges prevailing at Authorized Chevrolet Service Stations are based on Flat Rate schedules furnished by the Chevrolet Motor Company. These Flat Rates are based upon methods and the use of tools approved by the Chevrolet Motor Company, assuring the highest quality of work at the lowest possible price consistent with this quality.

Protect your investment by having your replacement repair and maintenance work done by an Authorized Chevrolet Service Station, who has all the necessary tools and the factory-trained men.

## GENUINE CHEVROLET ACCESSORIES

The materials used in the manufacture of these accessories are of the highest and finest quality.

These accessories will appeal to every discriminating Chevrolet buyer. They offer him the opportunity to show his individuality in the selection of added touches of refinement and luxury for his car.

They are carried in stock by all Chevrolet Dealers.

1934 1500  
St. Louis



***Owner's Manuals  
Service Manuals  
Vintage Ads  
and more...***



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